

Sludge Spreading Threatens PFAS Pollution of Food & Drinking Water

Sludge – the solid waste left over after the treatment of industrial wastewater and domestic sewage – is often polluted from the manufacture, use, and disposal of extremely persistent, toxic chemicals known as per- and polyfluoroalkyl substances (PFAS). When spread on farmlands as fertilizer, PFAS-containing sludge has contaminated milk and drinking water to unsafe levels. Both past and current sludge spreading remains a serious concern.

Known PFAS Pollution from Sludge Spreading on Farmlands

- **Arundel, Maine:** PFAS contamination of a public drinking water well lead investigators to evaluate a neighboring dairy farm for PFAS in 2017. Soil tests found PFAS as high as 878,000 ppt PFOS and 23,600 ppt PFOA. Milk from the farm had PFOS levels as high as 1420 ppt, and contamination was also identified in the hay and manure. The source was identified as sludge spreading which occurred between 1983 and 2004.
- **Decatur, Alabama:** An industrial facility discharged PFAS waste into the sewers between 1996 and 2008, and the sewage sludge was spread on 5,000 acres of farm land. Later sludge testing revealed PFOA levels of up to 2,531,000 ppt and PFOS levels of up to 1,296,000 ppt. In farm fields where the sludge was spread, PFOA measured up to 317,000 ppt and PFOS levels to 408,000 ppt. The PFOS levels in cow's milk from an impacted dairy were as high as 170 ppt.
- **Sauerland, Germany:** In 2006, PFAS pollution followed the spreading of "soil improver" that included industrial sludge on more than 1,000 farm sites. The sludge contained total levels of PFOA and PFOS of up to 8,600,000 ppt. Soils tested as high at 5,500,000 ppt. The PFAS spread into surface waters, contaminating public drinking water supplies, as well as fish. Limited milk testing did not result in levels exceeding 10 ppt.
- **North Carolina:** In 2015, PFAS pollution of surface waters was linked to sludge spreading in the surrounding area. Surface water levels reached a high of 1,020 ppt PFOA and 720 ppt PFOS. Sludge levels were 1,130 ppt PFOA and 1,680 ppt PFOS, among other PFAS.

PFAS Still Routinely Contaminate Sewage Sludge

- **Sepulvado, et al (2011):** In a study of the levels and transport of PFAS in municipal sludge, PFOS was the dominant PFAS chemical, with levels ranging from 80,000 to 219,000 ppt. Soils treated with municipal sludge were found to have levels of PFOS ranging from 2,000 to 485,000 ppt. Levels in soil increased linearly in relation to volume of sludge applied.
- **North East Biosolids & Residuals Association (2017):** PFOS in the sludge from 22 facilities in New Hampshire and the Northeast averaged of 34,000 ppt, with a high of 390,000 ppt. Levels of eight other PFAS were also identified, with PFBA having the highest average concentration at 34,600 ppt.
- **Maine Screening Levels (2018):** Maine established lower levels in 2018 for the screening of solid waste for beneficial reuse, including sludge applications, recognizing the potential for PFAS contamination. These levels are 5,200 ppt for PFOS and 2,500 ppt for PFOA. However, there is currently no requirement for sludge to be tested for compliance.